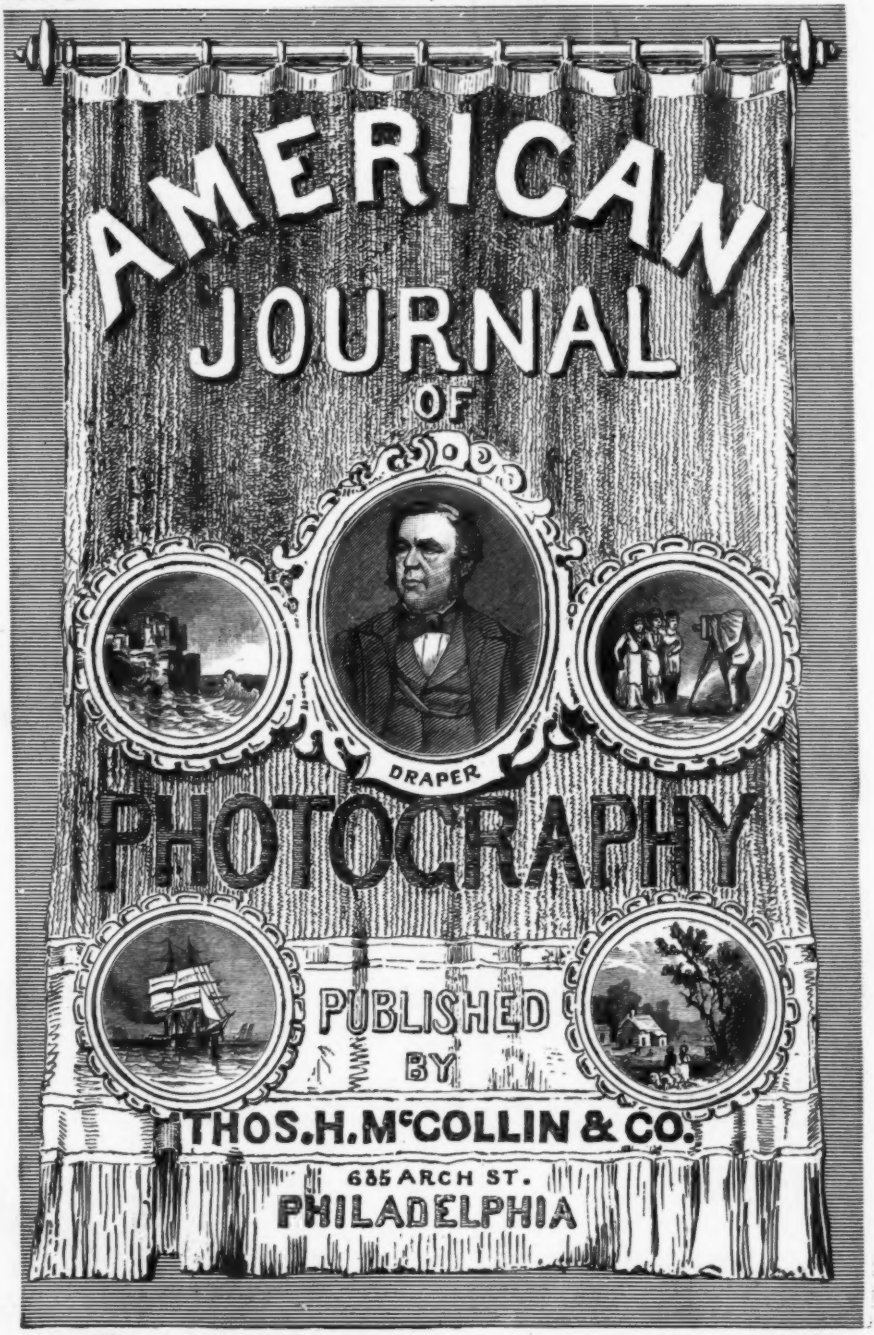
Vol. 8. MARCH, 1887. No. 3.



Published Monthly at $1.00 per Year, in Advance. Single Copies, 10 Cts.
Entered at the Post Office in Philadelphia as Second-Class Matter.

LARGE SIZES

—OF—

Morgan's Heavy Albumenized

—AND—

MATT SURFACE PAPER.

The demand has increased to such an extent as to become an every-day want—a necessity. Below we give a list of sizes, as follows:

(12 KILO. RIVES.)

18¼ x 22¾ (regular size)	per ream,	$36 50
18⅜ x 23⅞	"	37·50
22 x 27	per doz.,	2 50
23 x 36	"	3 00
27 x 35	"	6 00
27 x 41	"	7 00
30 x 40	"	8 50
35 x 46	"	12 50

SPECIAL SIZES TO ORDER.

THOS. H. McCOLLIN & CO.,

Sole Trade Agents,

No. 635 Arch Street,

PHILADELPHIA.

Negative by A. E. Taylor, Clinton, Wis.

PRINTED ON MORGAN'S, BRILLIANT ALBUMEN PAPER.

AMERICAN

JOURNAL OF PHOTOGRAPHY.

Published by THOS. H. McCOLLIN & CO.

VOL. 8. PHILADELPHIA, MARCH, 1887. NO. 3.

AMERICAN
JOURNAL OF PHOTOGRAPHY.
—PUBLISHED MONTHLY.—
$1.00 per Annum, in Advance.

Bromide Paper—Its Practical Applications and Successful Working

BY WILLIAM H. RAU.

Comparatively few seem to appreciate the uses of bromide paper, but gradually the interest is growing, and soon we may expect everyone to be familiar with its many uses.

I shall mention some of the applications that appear to me especially good.

Where a few, or even a great number, of prints are wanted for book illustrations, it offers special advantages, giving a flat print, without mounting, of a tone which is certainly artistic and rich in color, surpassing, in these qualities, the platinum print.

For contact printing, I would briefly advise that a lamp, or gas-jet, be used, in preference to the employment of daylight, as the time can better be regulated and judged of, with less failures.

I use Carbutt's "Multum in Parvo" lantern, having the wick always well trimmed.

Having first examined by daylight the negative to be printed from, this being necessary to correctly estimate the density, as the yellow color in a negative cannot be seen by any other light, then decide on the time. Be sure to have the flame always of the same size, and mark the distance of the frame from the lantern (say eighteen inches), thus insuring uniformity to the results.

For small contact prints, I prefer the B grade of paper, but when they are to be mounted, the A is preferable. I use fresh developer on every print. If in doubt about the exposure, use half the iron, and only add the full strength when you find the print slow in coming up.

When a customer is in a hurry, and anxious to have a print in the shortest time possible, the paper can be wet and squeegeed in contact with the wet negative, and a print made without delay.

I have seen prints made on C grade which had all the appearance of fine photogravures, and were admired by all who saw them, the rough surface giving them an artistic finish.

Another use for bromide paper, is the reproduction of line drawings from plans of architects, engineers, etc.

Having been called upon to reproduce eight drawings, which were on heavy bristol board, about as heavy as No. 1 white card mounts, 11x14 in size, and having but a few hours in which to do the work, I at once arranged to use the bromide paper, B grade, placing the gelatine face in contact with the face of the drawing, using plenty of padding in the back of the printing frame, to insure perfect contact of the two surfaces. The day being cloudy, I exposed three seconds, and obtained perfectly sharp negatives, with clear white lines, on a solid black ground. The development should be continued a long time, to secure this rich contrast, and the dish actively moved. Having made the eight negatives, and thoroughly washed them separately under a tap, I placed eight sheets of unexposed paper in a clean dish of water, and handled them a few minutes, until thoroughly wet, then floated one in contact, face to face, with the paper negative just made, floated both on the 11x14 glass, and drained well; then placed the same in the printing frame, and made

the exposure, three seconds in very weak daylight; printing them well before developing any, then one after the other was developed. The results were exact reproductions in size and color of the originals, which would have been impossible by the ordinary methods. They were delivered to the customer the same afternoon, wet as they were, as they were needed in a patent case.

For enlarging, the bromide paper claims the attention of everyone interested in photography, as small negatives can be so readily used to enlarge from, and save the weight of a large camera in the field. Amateurs are recognizing this more every day. While a few prefer silver prints, the majority are pleased with the artistic grey, black-and-white color of the bromide print.

Mr. George B. Wood, of this city, being one of the first to appreciate the advantage of this method, has prepared a fine exhibit for the New York Joint Exhibition, which will certainly attract a great deal of attention.

The professional photographer, as a rule, has so far slighted it, but is gradually coming in, and soon will be using it more. I have noticed that too many expect impossibilities from bromide enlargement. They seem to think that any kind of negative should give a good result. The folly of this is evident, as only good negatives yield fine enlargements; just the same as in any other process, a good negative gives the best result.

I have used daylight exclusively for enlarging, and have made prints up to 30x40 inches, and use the C grade in preference to the others, as giving the most artistic results.

With negatives, from 3¼x4¼ up to 5x7, I use a one-third size Darlot lens, varying the stops to suit the subject, using a medium stop for heads.

For landscape and groups, I use a 6-inch Ross rapid symmetrical full opening. For 5x8, and larger, I use a Beck autograph, 11-inch focus, generally full opening, but stop down to F. 16, on an architectural subject, enlarged to 30x40 inches.

It pays to use fresh developer on each print. Use good dishes, that have flat bottoms, which will save developer. Don't stop developing too soon, as this gives mealy, weak print. Be sure the developer is acid, and use as much alcohol as acetic acid in the first wash, after pouring away the developer.

This has absolutely banished blisters for me. Wash well before fixing, as this will do more to insure permanency than washing after fixing.

PICTURE MAKING.

BY JOHN BARTLETT.

The faculty of invention—or originality, if you so prefer to call it; or. if bolder, the creative power of the painter—if not actually engendered by observation of nature, is, at least, kept alive thereby.

With great painters, the art is always the man; they live and move, and have their being in art; as Schopenhauer would say, the personality is lost in it. At all times, and everywhere, they think of it, and love it. Inferior painters are artists at set times, when in their rooms, then we get original work; nocturns in blue, and symphonies in yellow; nightmares from the depths of their own consciousness, not the world's fresh ornament.

But we have not begun, in this key, to persuade you to a belief that photography is art. Quite enough has been said by the injudicious preachers of the doctrine to make the subject wearisome to the flesh, and of no profit to the spirit, of any common-sense photographer. What we shall try to do is to show that pleasing pictures can be taken directly from nature; or, in the humbler sense of the term, invented, if we habitually cultivate the powers of observation.

Photography, then, whether it be art or not, will, like painting, make us intensely interested in what is going on around us.

> "Wings shall we have, and as far as we can go
> We may find pleasure ——."

Does the thought ever occur to you, why photography, having such a scope, brings forth such poverty.

Nature is never old or stale, and is constantly creating picture after picture of

exquisite beauty, upon such principles of perfect harmony that it seems certain they are made solely for our enjoyment.

Yet we have eyes, and see not; see not beauty where it lies.

The metaphysicians are right. The external world has no actual existence to the mind unless it be perceived. Unless we constantly feed on the rarities of nature's truth, we shall think we are blessed ever on the dull substance of the flesh.

Does not nature work upon constant principles. Do we not frequently see repetition of similar attitudes. Groups of cattle by the water's edge, crowds of men and women, children at their play, and even inanimate objects, flowers and trees, and rocks and clouds, seem to arrange themselves as if in obedience to some general law.

Nature does not like scattering in composition any more than art; or, rather, art pleases by massing lights and shades, because in conformity with nature.

We are tempted to account for this principle of definite arrangement occurring under similar circumstances. There is an inborn desire in all animated creation to be as comfortable under the circumstances as possible, cattle and sheep, as well as men and women—and so every one tries to get a position most convenient for the accomplishment of the object for which all have assembled. Cattle must arrange themselves in conformity with the slope of the meadow, but, at the same time, they are sure to get as easy a position as possible.

In crowds of men and women, there is always a centre towards which most are attracted, causing a co-ordination of the individuals The few that may be indifferent to the general interest are the lazy ones, and there is no danger but they will be comfortable; their pose will be very easy; they will contribute a good deal to the repose of the scene. If the centralizing force is great enough to make the individuals sacrifice personal comfort, the picture is said to have great action, and will not display many graceful lines in its composition. So comfort gives grace—but a truce to this philosophy of composition.

Why should we reduce beauty to an equation of utility or necessity? Enough it is here. Let us enjoy it. "Beauty is truth; truth, beauty—that's all we know, or need to know."

We cannot tell why the rocks and the trees, which cannot change their position, give such touches of harmony to a scene; or why the clouds, which must "wait the visitation of the winds," supplement so harmoniously the landscape below them.

Some artists are perpetually searching for the most graceful attitudes, but never find them, because they seek only for an embodiment of their own conceptions of what is beautiful and graceful, and try to mould their unplastic subjects according to the rules laid down in the canons of art.

Grace is ease; beauty, repose. The attitude of many of the figures in Michael Angelo's paintings makes them seem as if they had been photographed directly from nature. Even his sublime prophets and sibyls have that look.

Shall we tell you the story of Chantry? Perhaps you have heard it before; but it fits in here so well:

Chantry, you know, was a celebrated English sculptor. All the great men of his time were anxious to have him perpetuate them in marble. Now, one of these great ones—despite his bust, I have forgotten his name—came to the sculptor's studio. Full of the desire to produce something grand, Chantry made a number of casts from his model in a variety of attitudes, but none of them pleased him. They seemed so constrained, so unnatural. At last the model, becoming tired, leaned upon a pillar in the room in an attitude so graceful and easeful that the artist cried out in delight, and besought him to stand just as he was until he secured the pose.

Casts of all these figures remain. Chantry did not destroy the ideals; he was great enough to acknowledge his debt to nature.

What shall we learn from this story? Shall the artist or photographer weary his models until exhausted nature rebels, and takes her easeful pose? Yes, provided the models are of that generous disposition to stand the treatment for art's dear sake. If not, it is better to begin at once to secure

graceful postures by making the subjects comfortable.

The ability to select from nature just what is fitted to the purposes of art is a greater talent than the power to combine and contrast elements derived from other pictures, or from our own fancy, even though one produces something new.

Something, old in nature, which has escaped ordinary observation, is always the discovery of genius. How long had nature pictured barns and cottages, and other common-place things, in the wonderful effect of light and shade which Rembrandt first revealed to art.

That mind must be fallow where no germs of picture-making power spring up by the cultivation derived from the study of paintings.

Painters give us spectacles to see nature through. What if the glasses do distort sometimes, we should be grateful for the removal of the cataract from our eyes, which were blind.

Story-telling in pictures is easy, if one has a definite idea of what he is going to tell. Possessed of the idea, the subject will grow of itself, and will need no definite building up.

The great trouble seems to be the possession of the notion that a picture is to be constructed, like a chair or a table, or something else in which beauty is subservient to stability. The picture so made is a puppet show, not a work of art.

We do not mean that one should despise instruction, but one should not be a slave to method.

The true laws of art are the laws of nature, and nature may have a balance of lines, and may have a love for the pyramidal structure in her composition; but the idea must be dominant in the mind, and not the method. If the idea is right, the method must be right, for the idea cannot be expressed in any other terms.

Dr. Johnson, you know, was anything but sentimental—pre-eminently judicious, rather inclined to lay down the law—yet he once said to Miss Burney: "There are three distinct kinds of judges upon all new authors or productions. The first are those who know no rules, but pronounce entirely from their natural taste or feelings; the second are those who know and judge according to rules; the third are those who know, but are above the rules. These last are those you should wish to satisfy, next to them rate the natural judges, but ever despise those whose opinions are formed by rules."

It is well, therefore, to know the rules, but it is better not to try to construct pictures according to rule.

The man who starts out with the intention of making a pyramid of his picture will assuredly make one; but he will as surely find his idea entombed therein, and around it the desert. But if the idea animate the picture, unity will be the governing principle, and beauty will be evolved from it by a natural process.

There will be balance of lines, because there must be harmony, and even the pyramid may be there; but it will be an altar to truth, not a place for sacrifice of beauty.

The Photographic Society of Philadelphia.

A stated meeting of the Society was held Wednesday evening, March 2d, with the President, Mr. Frederic Graff, in the chair.

Attention was called by the Secretary to circulars which had been received, in regard to an exhibition to be held in March by the Pittsburgh Amateur Photographers Society.

The Committee on Membership reported the election, as active members, of Dr. Charles L. Mitchell and Messrs. C. Howard Clark, Jr., Richard W. Kear, Meredith Bailey, John Carbutt, Jr., and Seldon L. Walkley.

The Executive Committee reported that they had considered the matter of permitting members to use the room for private lantern exhibitions. They preferred that the question of allowing the privilege be decided by the Society as a body, and in the event of a favorable decision, they had prepared, and would submit to the Society for approval, a series of rules, under which, in their opinion, the privilege should be granted.

After a short discussion, it was decided to grant the privilege, and the following resolutions, embodying the rules suggested by the Executive Committee, were passed:

Resolved, That the Executive Committee be, and are hereby, authorized to allow any member in good standing to have the use of the room and Society's lantern for the purposes of exhibition in the room, under the superintendence of an expert approved by the committee.

Provided: The member applying for the use of the room shall pay all expenses, and furnish the gas and lime used.

Provided: No member shall be prevented from being present at such exhibition; but notice of the fact of such private exhibition shall be posted prominently in the room for three days prior to the exhibition.

Provided: The same member shall not be accorded such permission more than once in any one month, nor shall more than two exhibitions be given in any one week.

The gatherings shall be solely for the purpose of lantern exhibitions, and no refreshments of any sort whatever shall be served in the room.

The paper for the evening, written by Mr. Charles R. Pancoast, was read, in his absence, by Mr. John G. Bullock, the subject being "Photographing at Niagara Falls," illustrated by about twenty-five lantern slides taken from negatives made by Mr. Pancoast.

Mr. Frederick E. Ives made a short address on the subject of Photographing by the Aid of the Phosphorescent Tablet. He said:

"Photography, by the aid of the Phosphorescent Tablet, is not a new discovery, having been known since 1880. It is not even a practically useful method, and is interesting only from a scientific point of view. My own experiments with the method having resulted in the discovery of certain facts not previously known, I have been persuaded to show the results, and make some remarks concerning them.

"The facts, already well known, are that Balmain's phosphorescent paint, which probably consists chiefly of sulphide of calcium, in a suitable vehicle, becomes luminous when exposed to light, and the light emitted acts powerfully on photographic sensitive plates; also, that heat releases phosphorescent energy. Solarized phosphorescent tablets have been used as a source of light for contact printing in the dark-room, and negatives have been made by exposing the tablet, in a camera, and then making a contact exposure on a photographic sensitive plate, in the dark-room. Such a photograph I now show. It has a somewhat granular appearance, due to the coarseness of the particle of sulphide of calcium, and, although the lines are partly sharp, they appear surrounded by a sort of halo. The editor of the *British Journal of Photography*, in a recent editorial, advanced the theory that this effect was due to a spreading of the phosphorescence, and that it would be impossible to obtain a sharp camera photograph by the aid of the phosphorescent tablet. My belief is that the phosphorescence does not spread, and that the effect is due merely to the fact that the luminnosity of the phosphorescent coating extends to considerable depth, and the light from the lower part of the layer acts diffusely, because it is radiated from a point at some distance from the surface of the photographic sensitive plate. To test this, I exposed a tablet in the sunlight until fully solarized, then removed it to the dark-room, and placed it in contact with another tablet, under pressure. It was impossible to discover any communication of phosphorescence by contact, and, if any occurs, it is insignificant. I also observed that prints and camera impressions, on my tablets, appear perfectly sharp to the eye, and found that they could be reproduced sharply by photographing in the camera. I, therefore, conclude that it is possible to make sharp camera photographs by the aid of the phosphorescent tablet, but that the method has no value, because it is always easier and better to make photographs in the usual way.

"It has been suggested that the tablet might offer some advantage in the reproduction of colored objects. It is true that the color sensitiveness is not the same as that of silver-bromide, but the difference

has been found to be altogether in favor of the silver-bromide.

"The second known fact that I mentioned, is that heat releases (exhausts) phosphorescence. It does not appear to have occurred to any one that this might be made a means of producing camera pictures by the action of the heat, until I discovered that the obscure heat rays of the lime light spectrum produced a strong impression on a solarized phosphorescent tablet. I succeeded in producing heat pictures of objects under certain conditions, which are described in a communication to the Franklin Institute, and published in the Institute Journal for this month."

Mr. Ives showed on the screen several photographs, among which was one, showing some buildings, made by the use of a phosphorescent tablet in the camera, and another in which a metalic object had been photographed by the action of reflected heat rays on the tablet in the camera.

Mr. Graff showed a photograph which had been presented by Mr. Samuel L. Smedley, City Surveyor. It represented an excavation made in constructing the tunnel on the line of the Schuylkill River East Side R. R., at Twenty-fifth street, near Spring Garden. On the rocks shown in the picture, two very distinct profiles of human faces could plainly be seen. Unfortunately, they were not discovered in the photograph until after the excavations had been filled in.

Mr. Rosengarten showed an interesting and valuable illustrated work, on "The Percheron Horse," by Mr. Walters, of Baltimore. The illustrations were reproductions from photographs of celebrated horses of this breed, made by the Messrs. Schreiber, of this city.

Adjourned.

ROBERT S. REDFIELD,
Secretary.

Captain Abney has not a great appreciation of the modern orthochromatic plate for landscape. He thinks they may be useful in taking white clouds on a blue sky and sunsets, but for ordinary work they would be valueless.

Photographing at Niagara Falls.

Read before the Photographic Society of Philadelphia, by Charles R. Pancoast, March 2, 1887.

It may seem the height of presumption, on my part, to grapple with so vast a subject as Niagara; but while in Buffalo last summer, I was enabled to make frequent photographic trips to the falls, and, therefore, trust that a few words will not prove uninteresting. For the benefit of those who may contemplate a trip in that direction, I will endeavor, briefly, to describe some of the most accessible and interesting views to be obtained.

Since the opening of the State Reservation, and the consequent demolition of the unsightly mills and buildings that formerly marred the beauty and grandeur of the place, many views, hitherto inaccessible, have been opened up. Primitive simplicity, unaided by art, is now one of the great features of Niagara, and one thoroughly appreciated by the lovers of the picturesque. Another feature of the Reservation being the almost entire freedom from "fees," and the annoying solicitations of hackmen and guides.

Those familiar with the geography of the Niagara River are aware that the falls face the north and the north-east, consequently a large proportion of the views must, of necessity, be made against the light. This fact, of itself, renders the photographing of the swiftly-rushing waters an unusually difficult task. The best time of the year is undoubtedly in the month of June, when the early foliage is at its prime, and before the excursion season has fairly opened. I speak from experience on this point, having suffered from the annoyance of unwelcome "figure compositions" suddenly presenting themselves in the field of view.

At that season, the sun being in its most northerly position, the light upon the falls is at its best. Ordinarily, a bright sun is best adapted for general work, although it must be remembered that, in views of the rapids, especially from the American side, an overcast day will give much the softest results. This, I may say, is true of any view in which there are harsh contrasts.

Two great enemies of the photographer

at Niagara, are wind and spray. While the former holds sway, it is useless to attempt any work. The latter is by no means a constant quantity, and successful views of the falls proper can only be made when it is at its minimum. Attempts to render what appear to be fine spray effects, result only in hopeless fog. My experience has been, that it is far preferable for the casual visitor, having but a limited time at his disposal, to eschew the difficult subjects, unless under the most favorable circumstances, and confine operations to views readily attainable, and such "bits" of picturesque scenery as may strike his fancy.

Photographing the falls from below is attended with so much risk and discomfort, that even the most ardent amateur may be excused from making the attempt; especially is this the case, when the results obtained, even under the most favorable circumstances, are not commensurate with the time and labor expended. I have been informed by some of the resident photographers that, during the year, there are indeed very few days on which really good pictures of the falls from below can be made. It is useless to attempt photography at Niagara without an exposing shutter capable of giving exposures from 1-10 to 1-100 of a second. My own experience being that with very rapid plates the best results were obtained by using as large an aperture as was consistent with fair marginal definition, and as rapid an exposure as any shutter would produce. I am convinced that a larger amount of detail is obtained in this way than where a slower exposure is made with a smaller stop. The extreme darkness of the foliage about the falls is such as to render the developing of very much detail almost an impossibility, especially so when contrasted with the brightly illuminated water. Plates showing a decided tendency to "softness", will, therefore, give better results. In order to proceed systematically, the photographer should commence in Prospect Park, as early in the morning as possible, and gradually work around over Goat and Luna Islands, finishing with the Sister Islands about noon.

Views from the Canadian side are best made in the afternoon. I may remark here that neither the American nor Canadian customs officers stationed at the new suspension bridge, make any objections to photographic apparatus, unless, however, the enthusiastic operator is sacrilegiously inclined, and desires to profane the Dominion Sabbath, then the "blue-nose" official will doubtless interfere. The virtuous Canadians evidently draw the line at photographing on Sunday. On clear days, when the falls are comparatively free from spray, some very fine effects are to be had from a point near where fomerly stood Table-rock. From a point on Clark's Island, about three-quarters of a mile above the Horseshoe Falls, a fine view of the Canadian rapids can be made. Late in the afternoon, when the shadows fall obliquely, the effect of the turbulent water is superb. For views of this character, it will be necessary to increase the speed of the shutter considerably, otherwise the swiftly-moving water in the foreground will be so much blurred as to spoil the general harmony of the result.

To one fond of engineering subjects, the cantilever bridge of the Michigan Central Railway will prove both pleasing and interesting. The best point from which to make it, being what is known as the "Old Maid of the Mist" landing, about half a mile above, and reached by a good road down the bluff. The walk along the bluff below the town of Niagara Falls, after passing the mills, is picturesque in the extreme, and affords some excellent subjects. I did not attempt any photographs of the Whirlpool Rapids, and, therefore, cannot say when and how the best views are to be made. From casual examination, however, I should say that the Canada side, after about 1 o'clock in the afternoon, would offer the most advantages. Having thus, in a general way, given some idea of the photographic work to be made about the falls, I must say that, in a field so rich and varied, it is impossible to establish any given route or class of subjects; let the results proclaim at once the individuality of the artist.

Buffalo offers but few inducements to

the pictorially inclined. The ruins of Fort Porter, on a high bluff overlooking the Niagara River, and those of Fort Erie, on the Canada side, immediately opposite, are subjects which, if not picturesque, are of great historic interest.

The government breakwater, at the mouth of Buffalo Creek, offers favorable opportunities for instantaneous views of the lake marine. To those who may be interested in technical points, I will say that the pictures exhibited were all made with a Ross Rapid Symmetrical lens, of 7½-inch focus, using an aperture of F. 16. The shutter used was one of my own construction. Plates by Cramer, developed with a pyro and soda developer, prepared in accordance with a formula given me by Mr. C. H. James.

About Artificial Light in Photography.

BY DR. HERMANN VOGEL,

"Photographische Notizen."

The application of artificial light to the purposes of photography, has been the theme of many discussions, both verbal and written, and not a few have endeavored to experimentally determine the best source of illumination, when the sunlight cannot be used.

Trials for the last twenty-five years have been made of the electric light magnesium and white fire. The electric light has had much attention directed to it, and is regarded in a rather favorable *light*, by reason of the facility with which it may be employed, on account of its cheapness, and the intensity of the illumination produced. Magnesium and white fire, in comparison, are much more expensive.

Photography with artificial light took an entirely new departure upon the discovery of the color sensitive plates, by which it became possible to make exposures with the ordinary yellow gas and lamp light.

Himly was the first to introduce the method of illumination with yellow artificial light, and it appeared as if the electric light would have to compete with it for the supremacy. But such result has not taken place. Even the electric light itself possessed only a confined application, being principally used where there was a lack of daylight, as, for instance, in London fog, or in St. Petersburg in the short winter days. There is no question that the want of experience in the management of the light leads to failures in its application to artistic work.

The exposures made with electric light, under the most favorable circumstances, are as good as those taken with daylight, but not better. The same may be said of the results obtained with yellow gas, or petroleum, and color sensitive plates. But, before practical application of these lights could be made, suddenly magnesium loomed up as a competitor, with results to back it that deserve the respect of the photographer.

Twenty-three years ago, when I made my first portrait with magnesium light, I used 1¼ gramme of magnesium wire, for which I paid 3 marks. This high price, the glaring contrast of the shadow side, and the disagreeable fumes, limited the application of the light to extraordinary cases.

The condition of things changed somewhat on the introduction of the gelatine dry plate. If we regard these as only six times as sensitive as wet plates, the quantity of magnesium necessary for an exposure would be reduced one-sixth, and at the above rate would amount to about fifty *pfennige* for a portrait.

Now a method of producing magnesium by electricity was found out, and at a rate of only one-tenth the cost twenty-three years ago; so that the expense of an exposure was reduced to five *pfennige*. Experiment has given a still more favorable comparison for magnesium.

The portrait taken with magnesium light illumination, by Haberlandt, which appeared in last September's *Photo Mittheilungen*, required about one-third of a gramme of magnesium, the cost of which amounts to not quite three *pfennige*, and yet the result is scarcely to be told from an exposure taken in daylight. Moreover, the application of the magnesium is so simple that it can be employed without the least trouble. No motor is used, no

dynamo, no conductor, various lamps and reflectors, etc., etc., as is the case when electricity is used. A couple of pieces of wire, held in the hand and burned without a lamp, is all that is necessary.

Herr Haberlandt employed ½ m. for the light side, 1-12—1-16 m. for the shadow side. He made use of a silk paper screen —tissue paper stretched over a wooden frame—about ¾ m. square, placed at 75 c. m. distance from the sitter, the object of which was to diffuse the light, and to soften the direct rays. The effect was found to be better when blue tissue paper was used to shield the light.

Herr Haberlandt observed that very slight changes in the position of the screen produced very considerable changes in the effect of the light; so that some experience is necessary in the application of the magnesium light. Preliminary experiments must be made before the desired effect can be produced.

The example set by Herr Haberlandt has been followed by others. In many of the North German galleries, magnesium has been called into service to supplement the dull light of the days before Christmas. The results are very striking, obtained on exposures of interiors.

Selle & Kuntze, in Potsdam, obtained excellent results in the photographing of the king's vault, in their city. They burned two metres of wire right and left of the camera, so that the direct light did not enter the lens, making use of a Steinheil aplanatic objective, second smallest stop. Time of exposures, only one minute. How extraordinarily different the quantity of light necessary, in any particular case, for an exposure, may be learned from the experience of Herr Haberlandt, who was obliged to make use of three magnesium lamps, burning for an hour and a quarter. The interior was one of those old-fashioned banqueting halls, decorated with dark wood panels and brown-colored furniture of the Renaissance style. As the cost of burning magnesium for an hour is not over a *mark*, the expenditure was richly repaid in the results.

As the latest experience in this field, may be mentioned the results of Mr. Kuntze in photographing a corpse at evening. During the exposure, one-and-a-half metres of magnesium were burned, at a distance of half metre from the body; the burning wire was held freely in the hand, the operator walking around the subject to illuminate the shadow side. The result was very satisfactory. The objective used was Voigtlander's Euryscope, No. 3, third stop. Special care must be observed, that the direct rays of the light do not enter the lens.

It is highly probable that these results mentioned will pave the way for the general application of magnesium as an artificial illumination in photography.

Photographic Portraiture.

Communication to the Edinburgh Photographic Society.

As the painter must ever be beholden to his brush and other mechanical aids to the expression of his genius, so must the photographer make intelligent use of his appliances, in order to the production of his best efforts. As portraits may be painted or produced by other means than those usually employed, so may photographic portraits be produced without a studio, but to the professional man the studio is as necessary in the one case as in the other. Amid all changes, certain requirements remain, and the studio is one of these. Let me say a word about it. All manner of construction and situation is to be found, and, probably, advocates for every variety we can think of; but while many are compelled to do with less than they could wish, or a different situation than they could desire, a very general inclination will be found in favor of a north light. My own preference is decidedly towards a north or northeast aspect. My studio is seven feet six inches in height at the side, rising from that at an angle of forty-five degrees. This I consider a good serviceable height. It will be found that a high roof lessens the effective control of the light by the operator, without which just so much more difficult and uncertain will it be to obtain the most satisfactory results. The construction of a studio, apart from its relation to the principal light, has not, I think, very

much effect one way or other on the work produced in it, unless it is of a most awkward and inconvenient description. It must be a very faulty studio indeed in which good work cannot be done, provided there be on the part of the operator the necessary knowledge of the requirements of any particular case, and how to meet them by skilful adjustments, and what I might call artistic tact.

In the matter of lighting the subject, one man's work is apt to partake of a certain uniformity of character, arising from his constantly working under the same, or nearly the same, conditions. A very common error many operators fall into is to place every sitter on the same spot, and endeavor to direct the light they judge most suitable on that spot, instead of trying the effect of different points, where they may be placed in relation to the main light; in fact, bringing "the mountain" to Mahomet, instead of Mahomet to the mountain. Where the facilities for doing this are very limited, or where it cannot be done at all, there is no more to be said, and the best must be done with what is available.

Where we have to deal with strong contrasts—such as white hair and high complexion, or white and black draperies—the subject will be most effectively treated by being made to face the light; where the conditions are reversed, an opposite treatment, according to the particular demands of the case, must be resorted to. The matter can only be referred to in general terms. A skilful operator will determine what to do when the subject comes into his hands, and especially when he sees the sitter in the light which falls just about where he is to be taken.

If good lighting necessitates considerable study and knowledge of effects, posing demands no less; indeed, the art of lighting a subject may be mastered with tolerable completeness, while posing may never be thoroughly acquired, because it is less of a mechanical accomplishment. It calls for a knowledge of harmony of lines, and the effect of balancing of parts—what, in short, is described as composition, and which every one does not naturally possess. An operator may fail in this, just as painters sometimes do, who, though good colorists, are defective as draughtsmen and in the ability to conceive a good picture. We sometimes feel that photography is too literal to be artistic. From a client's point of view, its tendency is to exaggerate the imperfections, rather than the *perfections* of face and figure. Should you have a stout figure to photograph, the neck, as a rule, will appear short. To obviate this appearance in the portrait, it is best to adopt a standing pose, with the camera a little below the level of the head. If a sitting position is chosen, undue height will be given to the shoulders, and the shortness of neck will be emphasized. In treating the opposite extreme—a thin figure with sloping shoulders (not so objectionable in the gentle as in the sterner sex)—I would recommend a sitting pose, and in the case of gentlemen, especially when the head is large, a little drapery, in the form of an overcoat loosely thrown back. The head should be turned in the reverse direction from the angle at which the body is placed, which will help to give the appearance of substance and harmony to the figure, and altogether make the picture more pleasing. A little attention of this sort will improve defects in the sitter, just as easily as the want of it may produce them where they ought not to exist. As a rule, twist the figure as little as possible when the person is stout. Some people turn the head more gracefully in one direction than in another; the head seems balanced in the one case, while in the other it may be the line of the neck and shoulder forms too great an angle. Should it be necessary to take that view of the face which gives prominence to this defect, turn the figure away, and the head towards the camera.

Allow me to say a few words as to the treatment of the different features of the face.

When the forehead is high and broad, no particular attention need be paid to the view taken of it, but should it recede too much, and a side or three-quarter view of the face be wanted, let the outline blend with the background. The same treatment should be resorted to where there is an

undue fulness of the upper part—of course, in children this is common, and is no defect, but when occurring in the adult, is better to be modified.

Very often one brow droops a little, or the eyelid may have the same tendency, in which case I find the best plan to avoid exaggerating this inequality, is to turn the figure to that side and the head towards the camera, keeping the droop in the shadow. Variety in noses is endless; make the lens look down at the short, and up at the long, or, rather, place them in these relations to the lens. If the outline be ungraceful, modify it by more front view. A really good or beautiful nose will be valued by its possessor, and its beauty will be best exhibited by a slight turn of the head; a broad nose is improved by the same treatment and a somewhat sharp light.

The full eye, when light, is difficult to manage, and if all other conditions are suitable, should be turned away from the light; in fact, the greater portion of the face should be in shadow. When the eye, on the contrary, is dark, avoid reflections which show with marked effect on the eyeball. A sunken eye is generally turned towards the light, but I prefer it turned away, and the light diffused with a medium, such as tissue-paper, close to the head.

With reference to the mouth, the chief want felt in the photographs is lightness and transparency of shadow, caused by the non-actinic color of the lips, as where they are brightest, and, therefore, most beautiful, the photograph gives the reverse effect. A good deal can be done on the negative to rectify this.

No man will succeed to any great extent as a portraitist, who does not exercise a constant and intelligent observation on all that affects his sitters. Details that to a careless or unobservant mind might seem too insignificant to pay any attention to, may yet be of the greatest importance. The things which go to make a pleasing portrait in any one instance, may be in themselves little matters enough: the turn of the head, one inch this way or that, the raising or the lowering of the eyes ever so little; nothing, in fact, is too small to notice. Let the eye of the operator acquire the habit of taking in his whole sitter. How different is the expression of a lady or gentleman when at their own table, or in the midst of friends on any social occasion, how vastly different from, what we see them when about to take the cap off the lens. An active consciousness enters in and deprives the picture of natural grace and beauty, as well as freedom of expression; the hands very often suffer, losing entirely their natural disposition. When you are thoroughly acquainted with you subject, you cannot be deceived by this conscious expression, and you can remind your sitters that they are not looking like themselves. Now, how can this be said or done when ten minutes previously you did not know such a face was in existence? This is the only reason I can give for so many random and missing shots in photographic portraiture. Knowledge of the subject, I say, is more or less a necessity when the highest results are aimed at. But you may say, How is this knowledge to be obtained? Are photographers to spend a week or a fortnight at their clients' houses previous to photographing them? Such is impracticable, and certainly in the case of small-sized photographs, photographers and sitters, in the majority of instances, must be strangers; but my remarks point more to larger photographs direct from life. I consider it risky, I don't say impossible, because it depends on the subject, to take a large direct picture of a person ushered into your presence and out again in the space of twenty minutes. On a first visit a *carte* might be taken, and on a second visit a cabinet, then the large one when you have gained the necessary acquaintance with your sitter's expression. It is a wonderful art, and because it is so greater wonders are expected to come out of it. The stream of its rapid advance is not confined to one channel, but it continuallo overflows and seeks with eager haste to fields and pastures new.

"I have been often struck, when looking at a camera obscura on a dark day, with the exact resemblance the image bore to one of the finest pictures of the old masters."—RUSKIN.

Art in America.

Professor Herkomer, A. R. A., Slade Professor of Fine Art at Oxford, when lecturing at Toynbee Hall recently, gave some account of America as seen by an artist's eyes. America has begun her art career with architecture, and, in Professor Herkomer's opinion, this was right, architecture being the beginning of art. Art, however, in the sense of painting, has not yet much hold in America, according to the Professor.

"I don't mean," he said, "the possession of pictures. In America they make plenty of money; and if a man fails, he can begin again, and does not lose prestige. Art in America is not strong at present. The best work done lately in all the art schools of Europe, has been done by American students. At the same time, no painters in America, or very few of them, are happy in America. It will take a very long time for art to become a real thing there. It needs infancy; architecture, and even sculpture can be taken there, and will grow; but art, in the sense I am talking of, must grow from the beginning. Painters who go there find that art transplanted dies out, or if any keep it alive, in some sort, they have to come perpetually to Europe to nourish it. One reason for this is the want of sympathy between the American patron and the artist. Before the War had run its course, some American landscape painters, who had studied in Europe, painted huge landscapes of the Rocky Mountains and other picturesque parts of America, and they had to paint with the brush in one hand, and a revolver in the other. They worked the oracle, and sold these pictures for large sums—£5,000, and even £10,000 each. But when Americans began to travel, and found that only £500 or £1,000 was paid for big pictures here, and when the railway enabled them to see the Rocky Mountains comfortably, they felt that they had been cheated by these artists. They did not know; they had not time for knowing; so they said, 'We will wait, and not trust any artist but who has an European diploma.' A feeling of that sort is hereditary; I believe a person is born with the suspicions of his forefathers. Dealers have done a great deal of damage to America; so it comes that nine out of ten painters in America cannot get their living without teaching."

About a year ago Professor Herkomer went over there again, and stayed five months, engaged in portrait painting. He never worked for a more appreciative people. He was struck by their power of reading character. It was not respectable to read character here, but it was all the mode there. He painted a trader—now worth a million sterling—formerly a seller of apples in the street, and this man said to him, "You must get my eyes; I trade on them." He painted Jay Gould, and reading character was one secret of that man's success. Professor Herkomer attributed the enterprise, the activity, the go-a-headedness of the Americans largely to their climate, dry and electric as it was.

Remarking upon the character of American society, he described it as being as refined as in England, without snobbery. America was going to do the greatest in most things, in art amongst the number. "We have," he said, "an American painter who has brought a strange style into our Academy. By a remarkable accident, his picture was hung in a conspicuous place. It was like a fresh breeze coming into the Academy. Some were frightened at it, but most of us welcomed it." The lecturer gave some account of his experiences of portrait painting in the United States, and in conclusion spoke of the reverence of Americans for England, and of the desirability of our learning from them how they learned from us.—*British Journal of Photography.*

Preliminary Hypo Bath for Negatives.

The question as to whether there are really any advantages to be gained by the use of a preliminary bath, composed of a very weak solution of hyposulphite of soda, before developement, is one that has been occupying the attention of many of our leaders in Germany, although I fear very little notice is taken of it in England. In a recent number of the *Photographische Mittheilungen*, Herr Gaedicke publishes some very interesting experiments in this

direction. A number of dry plates of the same emulsion, of a high degree of sensitiveness, were exposed, under perfectly similar conditions, under a sensitometer composed of from one to sixteen layers of paper mounted one on the other. These graduated fields were numbered one to sixteen, successively. The source of light, distance, and time were similar, so that on all the plates there was an equal influence of light. The development was now varied, in order to discover whether, by one or the other modification, a more extended picture, implying a higher sensitometer number, could be produced. First a plate was developed as usual with oxalate of iron. In order to be quite sure of bringing out the whole image, it was allowed to remain in the developer five minutes, although, according to experience, two and a half minutes would be quite long enough for the emulsion employed. The extreme legible number when, after fixing, the plate was held towards the northern sky, was No. 11. In experiment three, the plate was previously immersed in a hypo bath 1 to 2,000 for twenty seconds, then well rinsed and developed. The picture appeared in about one-seventh of the time; but with longer development, a veil was formed. The extreme visible sensitometer number was 11, the same as without a preliminary bath. Therefore, the preliminary bath produced nothing farther than the development without it—in other words, the sensitiveness of dry plates is not enhanced by a preliminary bath of hypo, but, of course, the process of development is materially expedited. Experiment No. 4 was a repetition of experiment 3, with the modification that no rinsing of the plate took place after the immersion in the preliminary bath, so that a portion of the solution still adhered to the film. But the development could not be prolonged, as too strong a veil appeared. The last legible number was 11. From this it will be seen that if such a preliminary bath is to be employed, a thoroughly good rinsing must ensue before development. In contrast to the foregoing, experiment 5 was a plate developed without a preliminary bath, and to every 10 c.cm. developing solution, one drop of bromide of potassium 1 to 10 was added. As would be imagined, the development was greatly protracted, and, after six minutes, only the number 9 was attained. The numbers 10 and 11 were not, as yet, visible; that shows that in development with bromide of potassium, the finest high-light details are not brought out. In continuing his experiments, Herr Gaedicke tried the effect of the addition of bromide of potassium to the developer, and afterwards some hypo solution. The effect was that the development was hastened, without any formation of a veil. The majority of dark chambers are not renowned for affording a superfluity of space; as in ships, every inch of space must be available, and all unnecessary utensils must be banished. Among these doomed vessels must be reckoned the preliminary bath. Herr Gaedicke made several experiments to determine the relation of hypo and bromide, and found the proportions 1 to 6 were the most favorable. He recommends the following solution:

Crystallized hyposulphite of soda	1 gramme
Bromide of potassium	6 grammes
Water	60 grammes

With this solution he took one drop to every 10 c.c.m. of developer, and developed one of the exposed plates. The image appeared in about the same time, and the whole development lasted, perhaps, half the time required with the ordinary oxalate development. The least legible number was 11. The whole image brought out, but in a much shorter time. The picture was perfectly free from veils. The addition of bromide and hypo is, therefore, undoubtedly to be preferred to the hypo bath—firstly, because the veil is avoided; secondly, the troublesome manipulation of the preliminary bath is saved; and, thirdly, because space is saved in the dark room. But besides being an accelerator of the development, this addition possesses a still greater and more important advantage—*i. e.*, the character it imparts to the negative. When we develop a negative in the ordinary manner, the strongest lights first make their appearance—in a portrait the linen and the flesh, and, lastly, the deeper

shadows, such as the marks in black clothing. The development of the latter may last so long that, in the meantime, the lights which first made their appearance become so thick that, in the prints, we find no modulation in the flesh, which appears as a white uniform mass, without any fine details. By the addition of the solution given, the entire surface develops itself at once; that is to say, the details in the deepest shadows appear almost simultaneously with the strongest lights, only that the shadows soon cease to develop farther. The picture looks at first quite weak, but this is soon altered. The high lights refuse to develope farther, and the dark parts continue to strengthen until sufficient density is attained. As a means of better controlling the process of development, this simple arrangement should not be wanting in any photographic studio, and should be used with every development when there is no reason to expect an over-exposure. For the development of instantaneous photographs, this addition is also to be recommended.

W. S. WOODBURY, *Photographic News*.

Amateur Enlarging on a Small Scale.

BY J. TRAILL TAYLOR.

Read at the Photographic Conference.

The problem of a simple and easy mode of enlarging for amateurs, as regards the lighting department of the operation, is still open to receive more attention.

I am the fortunate possessor of several oil lamps, whose fine Greek names do not sufficiently counterbalance the trouble in trimming the wicks (which, in some instances, are many), the great heat, and the unpleasant smell. Could an enlarging lantern be lighted with common gas, then, indeed, would all the trouble cease; but carburetted hydrogen gas as supplied from the Company's mains is frequently deficient in illuminating qualities in a lamentable degree.

It is, however, well known to all of us that house gas may have its luminousness greatly intensified by mixing with it the vapor of some one or other of the numerous hydrocarbons. This subject has been brought before the world at various intervals during thirty years or more, and a greater or less degree of success has attended individual instances of the application. It is this system of illumination which I have thought might fittingly be impressed into the service of the photographer, who, without having the mess with charred wicks and oil every time he wishes a light, might desire his appliances reduced to a gas burner, and the whole preparation reduced to connecting a rubber pipe with the nearest gas bracket.

Of the various systems employed for more thoroughly carburetting gas, that which I bring before your notice is one of the Albo-carbon *genus*. I purchasad it at one of the London shops, for 8s. 6d., and having had it in use for some time can speak of it very favorably. Its principle consists in a piece of metal being placed above the gas flame, and which, thus becoming heated, conducts the heat to a chamber behind, which contains a hydrocarbon that vaporises a temperature of 150 or more.

The arrangement is such that either the gas in its primitive state, or after it has been enriched to saturation, may be emitted at the jet, and, without having had recourse to photometry to determine the advantage, it appears to me that the intensity of the light is increased fourfold.

But in order still further to obtain the highest advantage offered by the system, I have had this modified burner constructed, in which two flames are employed, one being about an inch behind the other, with an air-space between. This is essential to success in obtaining the best effect.

[The speaker then exhibited and explained the construction of the gas burner to which reference had been made. By means of a socket which had a thread similar to an ordinary gas burner, this one could be lifted in or out of the enlarging lantern immediately, and by previously warming the reservoir, so as to initiate the vaporisation of the "Albo-carbon" inside the light, assumed its energy in half a minute after being ignited. He spoke of the disadvantage of dimensions in the flames;

magnitude, he said, was not compatible compatible with the highest definition. Hence, having first secured the required brilliance, he interposed a screen or diaphragm between the lantern condensers and the flame, and as close as possible to the latter. The aperture in the diaphragm was circular, and it varied from half an inch to an inch in diameter, the smaller one giving greater sharpness to the enlargement than the other. The position of the diaphragm was such as to hide all the light save a very bright portion selected from the most luminous part of the flame. He found it also advantageous to insert immediately in front of the diaphragm a small plano-convex lens, which prevented some loss of light, by concentrating it upon the lantern condensers, at the same time that it permitted the light to be brought a little closer to them. He showed on the blackboard by what means this system could be applied to the enlarging of negatives of larger dimensions than it was possible to utilize for this purpose by the condensers of his lantern. With the larger diaphragm, the burner shown was quite applicable for projecting pictures on a screen sufficiently well lighted for a parlor lantern entertainment.]

Formulas for Developers—How Should they Read?

Read by Dr. John H. Janeway before the Society of Amateur Photographers of New York, Feb. 8, 1887.

I think that the questions we have for discussion to-night are both apt and timely, especially so when we see how flooded the literature of our art science is with the constantly increasing armies of developers.

The tyro is early told by the many writers, "to choose out a good developer, and stick to it." Sound and good advice, surely. But how is he to pick it out?

It is like taking a young man into a machine-shop, and saying to him, Here are all the materials required, and all the tools necessary to work with, now go to work and build a locomotive. Does he know the difference between a wrench and a jack screw? So it is with the beginner; scores of formulas for developers are before him, but what does he know of the properties of the different ingredients? The pyro, what is it for, and how does it act upon the emulsion or the plate to bring out the latent image? The carbonates of soda and potash? He sees that some use one, some the other, and some both. If he told their action, and the requisite amount necessary to produce that action, and what is the sulphite of soda added for to the above, sometimes in "A," and sometimes in "B?" He is told that citric acid and its salts, and the bromides are restrainers. Restrainers of what? He sees that the bromides are recommended for over-exposed and under-exposed plates; but why? And so on. Even the fixing bath is a perplexity to the beginner.

But even when he has mastered, to a considerable extent, the properties of the different articles comprising the developing bath, his troubles are not at an end. The great array of unscientific, incongruous, bulky, wasteful, and happy-go-lucky developers (and a careful survey of the different published formulas will soon show that each of the above classes have one or more in its ranks) stare him in the face. From which is he to choose? If he is determined to know himself, and not take the word of another, he begins by mixing up one developer after another, according to the formula given in each case, and tries them in turn, in search of a good developer, and the one that will give him the best reward for his work; but he soon finds the shelves of his dark-room full of bottles and his pocket-book empty. Or suppose that a fair young lady amateur, not having the knowledge, time, or facilities to prosecute the above experiments, chooses, by the advice of a friend, a certain developer, which must be made up strictly in accordance with the formula. Intending to take a trip for a short stay in the country, where she hopes to make some shots at choice bits of woodland and lawn, she has the developer made up for her at the nearest drug store, never dreaming of the result in bulk. Now "A" calls for 60 ounces, "B" 46 ounces, and an equal quantity of hypo solution is required. To start, she must sling her camera in its case over one shoulder, tuck the tripod under her arm,

seize two one-gallon demijohns in one hand, a demijohn of the same size and one or two hand-bags in the other. Her dismay at this bulk can easily be seen. "The impediment" of this outfit would soon tire out the most enthusiastic of amateurs.

How much better it would be, especially to the amateur, if all the formulas were given so many grains to the ounce of water. It would take but a glance to convince him, whether it was a scientific one or not, whether the proportions of its ingredients were correct and capable of producing the best and desired results. What a saving of time and money it would result in; saving in solution of many of the salts used, and especially sulphite of soda, which rapidly deteriorates, and becomes useless, or nearly so. Why then make them in that way? Why not let the formula read:

Carbonate of soda . . . . So many grains.
Sulphite of soda . . . . . " "
Pyro . . . . . " "
Water . . . . . 1 ounce.
Carbonate of potash, or
soda . . . . . So many grains.
Water . . . . . 1 ounce.

And then multiply each ingredient by ten or its multiple, and you will have a developer of sufficient quantity and sufficiently fresh to meet all demands; and then, if the plate makers would paste on the cover of their boxes their formula for the developer reduced to grains to the ounce, it would be of great advantage and economy to any one trying one or two plates. The developer could be made up before opening the boxes.

A careful analysis of eighteen published formulas show a great diversity in the ingredients, and

The largest amount of pyro used to the ounce of water . . . . 10 grains.
The largest amount of sulphite of soda used to the ounce of water . . . . . 80 "
The largest amount of carbonate of soda used to the ounce of water . . . . . 40 "
The largest amount of carbonate of potash used to the ounce of water . . . . . $21\frac{3}{10}$ "

The smallest amount of pyro used to the ounce of water . . . . $1\frac{3}{5}$ grs.
The smallest amount of sulphite of soda used to the ounce of water . . . . . 5 "
The smallest amount of carbonate of soda used to the ounce of water . . . . . $1\frac{1}{5}$ "
The smallest amount of carbonate of potash used to the ounce of water . . . . . 5 "

In many of the formulas the amount of sulphite of soda was largely in excess to the quantity generally conceded to be required in proportion to the pyro, 4 of sulphite of soda to 1 pyro. But in one we have sulphite of soda, 50 grains; pyro, 6 grains. Another formula says his alkali is weak, 40 grains to the ounce of water.

The use of saturated solutions in making up the developer should, I think, be discarded, or the reason that they are uncertain, the changes of temperature and evaporation rapidily affecting them; and then the mixing of two or more saturated solutions oftentimes produces the deposition of more or less of one or both of the sales, but never in equal proportions.

I think, also, that the use of either the dry or granulated salts is also objectionable, especially the carbonates—carbonic acid is not the most stable element. In the crystal you have a fixed and determinate quantity, and they should, therefore, always be called for.

I have not referred to the part of the question whether the ounce should always be regarded as composed of 480 grains, for if the method of writing the formula in so many grains to the ounce of water be adopted, there is no further trouble to be apprehended as to whether the ounce is 437 or 480 grains. But should the term be used? I think that the quantity in grains should be given (in 437½ grains or 480 grains). This is rendered necessary from the fact that most of the articles used are sold by avoirdupois weight, 437½ grains. Another good plan would be, in directions for making up the formula, if the grain system is not adopted, would be to say: Water, to make so many ounces. One

should recollect in reading the English formulas that there is a difference of 4 ounces more in the pint used by them.

OUR PICTURE.—We give our readers this month another child study. This time from the studio of Mr. A. E. Taylor, Clinton, Wis. Mr. Taylor has chosen a background in harmony with his subject, suggestive of a country scene, without being obtrusive to distract the attention from the main study.

THE *Swiss Cross*.—The very first number of the *Swiss Cross* showed that it was conceived in the right spirit; each succeeding number bears evidence of its growth and progress. The department of Photography, under the management of Miss Marquand, is in harmony with the general scheme of the magazine. The paper on "Selection of Subject" shows how photography can make one most intensely interested in all that is going on around him, and so stimulate one's observation of the beauties of nature. The thoughts are well conveyed, in clear and forcible language, and the style pleasing and attractive.

February Bargain List.

Accessories:

1—Papier Mache, Fire Place and Cabinet combined, fair condition, reduced to 4 00
1—Papier Mache Pedestals and Bases, good order, each..... 2 00
1—Universal Position Chair, Crimson Terry; all Attachments except Baby Chair; good as new 30 00
—Spencer Head-rest 11 00
1—Drapery 4 00
1—Drapery 6 00
1—Centennial Camera Stand, in good condition 8 00
1—Papier Mache Log, 2 feet long..... 2 00
1—8x10 Osborne Interior, "new," light left of subject 16 00
1—Pharaoh Position Chair..... 20 00
1—Seavey Rock, new..... 4 50
1—Seavey baby shell, with background, complete 4 00
1—5x8 Eastman's Roll Holder, in good condition 15 00
1—8x10 Eastman's Roll Holder, good as new 20 00
1—8x10 Hough's ground, light left of sitter 12 00

Camera Boxes.

1—5x8 Tourist Outfit, including 5x8 Tourist Camera Box, 2 Daisy Plate Holders, 1 Extension Tripod, and 1 Canvas Carrying Case, very little used. Price, new, $40.50, will sell for 30 00
1—6½x8½ Portrait Box and Plate Holder, fair condition 6 00
1—5x8 A O Co. first quality box, 4 double holders, carrying case tripod.
1 5x6 Dallmyer R R Lens, used very little, good as new 68 00
1—½ size Am. Op. Co. D. S. B. Portrait Camera, fitted with ½ size Ross Lens 45 00
1—4x5 Equipment, No. 4, Anthony's View Camera and 6 Holders.... 15 00
1—10x12 Am. Op. Co. double swing-back Camera..... 25 00

Lenses.

1—1-4 Size Darlot Gem Lens 3 00
1—Ross Symmetrical Lens, 4½ inch focus, 5x8 plate full 25 00
1—Finder..... 2 25
1—Prosh Shutter No. 2, Pneumatic release 10 00
1—Matched pair German Stereoscopic Lenses, in good order..... 15 00
1—Matched Pair imitation Dallmeyer Lenses, per pair. 12 00
1—Abendroth Lens, 5x8..... 18 00
1—4x4 Dalmeyer Port Lens 50 00
1—4x5 Dalmeyer View Lens..... 6 00
1—5x8 " " 15 00
1—Woodward Condensing Lens.... 10 00
1—4x4 Darlot Globe Lens 25 00
1—No. 5 A 4x4 Voigtlander Portrait Lens 45 00

PATENT FOR SALE. THE ADAMSON CO. Patent Solicitors, Muncie, Ind.

WANTED.—Situation as first-class Printer; can operate, if necessary; good wages required; good reference. Address J. B. Holver, No. 2½ Chamberlain St., Rochester, N. Y.

WANTED—Position in a first-class Gallery as retoucher or printer; best reference, Address L. Wendenburg, College Hill. Easton, Pa.

WANTED—Situation by a photographer; good printer, toner and finisher, with some experience in operating. Best reference. Address Jacob Sheidt, P. O. Box 317, Ashland, Ohio.

Superior Mammoth Voitlander Tube, the property of a retired photographer, will be sold low. Apply at the Husted Studio, Ridge Ave. and Wallace St.

WANTED—By a young man of several years experience, a position as Printer and Toner, can also retouch and make himself generally useful in operating or dark room. Address A. H. Blencowe, Lynchburg, Va.

Amateur Photographers

AND ALL LOVERS OF NATURE SHOULD READ

The Swiss Cross

A Monthly Magazine of the Agassiz Association.

It maintains a special DEPARTMENT OF PHOTOGRAPHY, with regular contributions from PROF. JACOB REIGHARD, of the University of Michigan, and MISS LAURA M. MARQUAND, an enthusiastic and able lady amateur photographer.

Press Comments on the First Number of "The Swiss Cross."

"Altogether, this first number is an extremely creditable production, and of a nature to convince us that *The Swiss Cross* will not be content with hurling hard, technical facts at the heads of its readers, but will inspire them with a desire to go to nature's open volume to study her secrets and admire her charms, rather than to learn her by second-hand from books. *It is a splendid periodical to put in the hands of young people*, to develop in them, at an impressionable age, the scientific spirit, that they may cultivate the habit of carefully observing the world about them."—*The American Hebrew.*

"*The Swiss Cross* promises to become one of the most popular magazines of the day. The special field which it is intended to occupy, which is rather scientific than otherwise, is a large one, and offers an abundance of room for a publication of this character."—*The Railway Age.*

Subscription Price, - - $1.50 a Year.

The Swiss Cross and the *American Journal of Photography* to the same address, $1.95. Send for sample copy.

N. D. C. HODGES, Publisher,

47 Lafayette Place, New York.

Eastman's Special Dry Plates.

ALWAYS RELIABLE!

Eastman's Negative Paper & Roll Holders

Which can be Fitted to any Camera, and all Requisites for Film Photography.

Eastman's Permanent Bromide Paper,

For Contact Printing and Enlarging.

St. Louis, Mo., April 16, 1886.

EASTMAN DRY PLATE AND FILM CO.,
Rochester, N. Y.

Gentlemen:—The Bromide Paper "C" which you have sent me gives vigorous and clear prints, and my artist finds it to have an excellent surface for crayon and pastel work, so that I believe it to be well adapted for the purpose intended.

Yours truly,

G. CRAMER.

SEND FOR CIRCULARS

Eastman Dry Plate and Film Co.,

Branch Office, 13 Soho Square, London W, England. ROCHESTER, N. Y

Photographic Stock Dealers

Would do well to write to the

RUSSELL MANUFACTURING COMPANY,

McKeesport, Pa.

FOR PRICE LIST OF

Black & Tinted Ferrotype Plates

OF THE BEST QUALITY.

These are the STANDARD GOODS.

Send a Trial Order and be Convinced.

A. M. COLLINS MANUFACTURING CO.,

MANUFACTURERS OF

Cards and Card Boards,

—FOR—

PHOTOGRAPHERS,

No. 527 ARCH STREET,

PHILADELPHIA.

Completion of Removal!

MORE ROOM! LARGER STOCK!
GREATER FACILITIES!

A FULL LINE OF

PHOTOGRAPHIC GOODS AND SPECIALTIES

Seed Dry Plates; Anchor Brand, A. U. Paper; Moreno's Improved Developer; Hermagis Lenses; Compound Shutters; Felt Grounds, Accessories—A full line.

GEORGE MURPHY,
2 Bond St., New York.
Door E. of B'way.

MINOTT M. GOVAN,
Formerly with L. W. Seavey,
Importer of

Choice Photographic Draperies,

Sole Agent for Bird's Patent Vignetter, . $2.50
Agent for Packard's Pneumatic Shutter . . 4.00
Photographic Backgrounds from 15c to 35c per square foot.
Papier Mache Accessories at reduced prices.
Grass Mats, Ivy, Flowers, etc.
For Price List address

MINOTT M. GOVAN,
28 W. 14th St., New York.

Stamp Photos, Patented December 29, 1885.

Patent Stamp Photos.

Gummed, Perforated and Burnished.

To Licensees, 50 cents per 100 or $3.50 per $1000; Minette size, 50 cents for two dozen, or $1.50 per 100.

Send for circular of special offer for exclusive city rights.

HULBERT BROS., Proprietors, (*Genelli*), 923 Olive St., St. Louis, Mo.

THE PHOTOGRAPHIC TIMES

And American Photographer.

Issued Every Friday.

MONTHLY EDITION ISSUED THE LAST FRIDAY IN THE MONTH.

Subscriptions.

One copy Weekly issue, postage included, to all points in U. S. or Canada, - - - - - - - $3.00
One copy Monthly issue, postage included, to all points in U. S. or Canada, - - - - - - - 2.00
Weekly issue to foreign addresses, postage included - 4.00
Monthly issue to foreign addresses, postage included - 3.00
Single copy, Weekly, 10 cents. Single copy, Monthly, 25 cents.
A Specimen Number Free.

Club Rates.

Philadelphia Photographer and Weekly issue of Photographic Times and American Photographer, to one address, for $6.50.
Subscription price in advance.

Advertising Rates.

Size of advertising pages, 6⅛x9¼ inches; outside size, 8½x11¾ inches.
Cards, 2¼x3 inches, per insertion, $2.50.
One page, each insertion, in either Weekly or Monthly edition, $20.
Parts of page in proportion.
Business Notices, not displayed, per line, 15 cents.

Special Terms on yearly contracts. Write to publishers. Copy for advertisements must be received at office on or before Monday, five days in advance, of the day of publication. Advertisers receive a copy of the journal free, to certify the correctness of the insertion.

. 188

SCOVILL MFG. CO., 423 Broome Street, N. Y.
Publishers of
The Photographic Times and American Photographer,

Please send . . . . . copies . . . . . of the . . . . . issue
commencing with . . . . . 188 . . . for . . . . . to my address:

Name . . . . . .
P. O. . . . . .
County . . . . . .
State . . . . . .

Note.—Please specify whether Weekly or Monthly edition is desired.

THE ST. LOUIS DRY PLATE CO.

827 CHOUTEAU AVENUE,

ST. LOUIS, MO.

Have recently Enlarged their Factory, so that they are now able to fill all orders promptly. And under their new management have improved the quality of their Plates, so that they are now more Uniform and Reliable than heretofore, and are pronounced by those who have used them to be equal to the Best in the market.

ST. LOUIS DRY PLATE CO.,

827 Chouteau Ave., St. Louis, Mo

VIEW CAMERAS

FOR PROFESSIONALS AND AMATEURS.

Ideal.

New Model.

New Model Improved.

Commodore.

Challenge.

For Sale by all Stock Dealers.

Send for our New Illustrated Catalogue.

ROCHESTER OPTICAL CO.,

11 and 13 Aqueduct St. 3d mo—85 ROCHESTER, N.Y.

CARBUTT'S
KEYSTONE DRY PLATES

And Photographic Specialties.

Specials for Portraiture.
A. for Transparencies.
B. for Landscapes and General Photography.

OPAL PLATES, Gelatino-Albumen or Gelatino Chloride for Positives and Transparencies.

Multum in Parvo Dry Plate Lantern.

Carbutt's Pyro and Potash Developer Concentrated.

Ruby Paper and Negative Varnish.

For Sale by all Dealers.

J. Carbutt Keystone Dry Plate Works,
Wayne Junction, Philadelphia, Pa.

USE

Cramer's Plates.

THE "STAND BY'S."

UNIFORM & RELIABLE.

For Sale by all Dealers.

☞USE THE STANLEY DRY PLATES FOR QUICK WORK.

BUY THE BEST.

NO OTHER WILL GIVE YOU HALF SO MUCH SATISFACTION.

Send for our
—CATALOGUE—
AND GET
The Best of Everything

FOR DRY PLATES
ANTHONY'S Patent Perfect PLATE HOLDERS
ARE SUPERIOR TO ALL.

APPARATUS OF ALL KINDS.

Dallmeyer Lenses, Success Cameras, The Fairy Cameras, The Novel Cameras, Schmid's Detective Camera.

Chairs, Neg. Boxes, Camera Stands, Printing Frames, etc., etc.

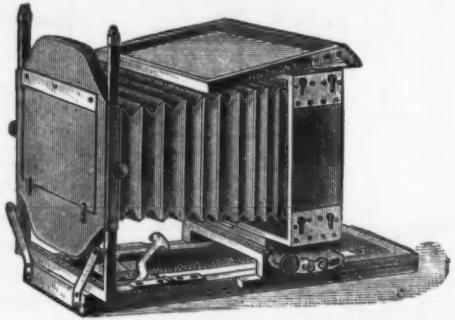
DALLMEYER

For Wet or Dry

ANTHONY

Wide-Angle Rectilinear

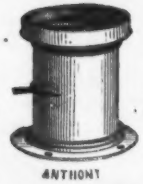
E. A.
SINGLE COMBINATION, RAPID, WIDE ANGLE, PLATYSCOPE, PORTRAIT AND VIEW LENSES.



THE FAIRY CAMERA.
The Lightest and Best for Out-door Work.

FOR EITHER DRY or WET PLATES
NOTHING EQUALS
THE BENSTER PLATE HOLDER.

DALLMEYER

Nothing  Compares

ANTHONY

Rapid Rectilinear.

O. I. C.
PORTRAIT, COPYING, CLIMAX PORTRAIT, GEM, AND COMPACT VIEW CAMERAS.

E. & H. T. ANTHONY & CO., 591 Broadway, NEW YORK.

The attention of Photographers is called to the large and very complete facilities which

PHILLIPS & JACOBS

—NOW HAVE FOR—

Refining all kinds of

Photographic Wastes.

—AT THEIR—

NEW LABORATORY,

No. 622 RACE STREET,

PHILADELPHIA

N. B.—A pamphlet containing directions about saving waste will be mailed free to any Photographer applying for one. 2—84

JAMES F. MAGEE & CO.,

Philadelphia,

Manufacturers of

Fine Photographic Chemicals.

We would call the attention of Photographers to the strict purity and superior excellance of our Nitrate of Silver. We devote special personal attention to its manufacture. And its increasing sale for the past 25 years is the best proof of its popularity.

To those who have not used it—GIVE IT A TRIAL.

For Sale by all

Stock Dealers throughout the Country.

2—84

Lantern Slides.

WILLIAM H. RAU & CO.,

1206 CHESTNUT ST., PHILADELPHIA.

A large and unequaled collection of Magic Lantern Slides, representative of the different Countries of the World. Many unique subjects not to be found in any other collection.

As only the most skilled labor is employed, and the work personally superintended, the results are superior to any other house in the country.

We have every facility for making special work, and would call the attention of lecturers and others, who are interested in the subject, to our method of copying from engravings, plans, maps, and objects, which is such that the result produced can scarcely be told from production from the originals.

Special care taken with the making of Slides from Negatives by Amateurs

Slides Made for the Trade.

SEND FOR CATALOGUE—Free.

Having prepared a special department in our establishment for making

Permanent Bromide Enlargements,

we are ready to make enlargements of any regular size from PROFESSIONAL or AMETUER Negatives promptly, and of the best quality.

When good original negatives are furnished, these enlargements require little or no finish, and are far superior to those made by any other process.

Permanent Bromide Enlargements can be artistically finished in india ink, crayon, pastel, water colors, or oil with facility.

Enlargements can be furnished within 48 hours after receipt of negative.

When sending Negatives for Enlargement please specify—1st. Size of Print. 2d. Vignetted or Solid. 3d. If Vignetted, how far down the figure is to show. 4th. If the print is intended for finishing in Crayon, Ink, Water Color, Pastel or Oil, please state which.

RETOUCHING. Coarse grinding on negatives for enlarging should be avoided.

WILLIAM H. RAU & CO., 1206 Chestnut St., Phila., Pa.

MARCY'S SCIOPTICON
IS A GREATLY IMPROVED FORM OF
MAGIC LANTERN
FOR OIL OR LIME LIGHT.
FOR HOMES SUNDAY SCHOOLS AND LECTURE ROOMS

IT STANDS UNRIVALED.

THE OIL SCIOPTICON is always ready, easy to manage, and inexpensive to use—showing with great brilliancy and steadiness for hours, without re-adjustments or annoyance. For these reasons it is a great favorite all over the world, as can be shown by innumerable testimonials.

EXTRACT FROM WALTER B. WOODBURY TO THE MANCHESTER PHOTOGRAPHIC SOCIETY, published in the British Journal of Photography.

"In order that all honor be given to the person to whose researches we owe our present compact and powerful oil lanterns, I wish it to be more widely known that the honor belongs to Mr. MARCY, of Philadelphia, who spent many years in working out and completing what he appropriately named THE SCIOPTICON. When in America, seeing the advantages of MARCY'S invention over the clumsy ill-lit things we were using, I determined to introduce it into this country on my return, and arranged with Mr. MARCY accordingly. As I expected, the instrument has become a great favorite with the scientific public. I believe nearly all the members of this society possess one."

MARCY'S ELECTRIC FIXED FOCUS LAMP is the only perfect apparatus for the application of the Electric Light to the Magic Lantern. It gives a uniform field of illumination, without the slightest tremor, and renders beautifully the deepest shadows on the slides, with a fine stereoscopic effect.

Thos. H. McCollin & Co.,

AGENTS,

635 ARCH STREET, PHILADELPHIA.

THE WOODBURY DRY PLATE

Is Easy of Development, attaining any Required Degree of Intensity without the Slightest Tendency to Fog; gives Vigorous, Brilliant Negatives, and Soft High Lights, Clear Shadows, and a Wealth of Gradations Unequaled by any other Plate.

Read the following letter from Mr. Xanthus Smith, the eminent marine painter.

MR. THOS. H. McCOLLIN,

DEAR SIR:—Learning that it was the intention of the WOODBURY DRY PLATE CO. to manufacture a plate that would be of an excellent quality, and above all of a uniform standard of excellence, immediately on their coming upon the market I purchased and used them. The work which I did upon them was of so remarkable a character, that I feel it due to the maker that I should say a few words in approbation of his skill. The plates are heavily coated and appear to be rich in silver, and it is a perfect delight to develop them. I do not use the formula for development given with them, but my own. I prefer pyro and ammonia as a developer for dry plates. Now the beauty of these Woodbury plates is, that they come up slowly and may be allowed to remain, it seems, almost an indefinite time in the developer without the slightest tendency to fog or dim in the deepest shadows, and during this time the image is growing wonderfully in refinement of tones. When you can get a negative that is sufficiently intense in a few points of high light to leave the paper white and absolutely clean in the touches of deepest shadow so as to print a clear black, with every possible gradation of tone between, then you have about perfection, and I attribute it to this cleanness and slowness of developement, that these plates realize in a wonderful degree the texture of objects.

All specks from dust, spots, and stains in negatives, by giving a surface upon the finished print destroy the appearance of relief—to exemplify what I mean, all who enjoy looking at stereoscopic pictures know how the effect is marred by a spot or blemish on one of the prints—and the impression on the eye is much the same, though in a less degree with ordinary prints. Should the Woodbury plate maintain its excellence, which there is every reason to hope it will, those practicing photography, will enjoy that happiness which success only can give.

XANTHUS SMITH.

Manufactured by WILLIAM GRISCOM, Jr.

THOS. H. McCOLLIN & CO.,

TRADE AGENTS,

635 ARCH STREET, PHILADELPHIA.

Jno. G. Hood. Wm. D. H. Wilson.

Established, 1865.

WILSON, HOOD & CO.,

No. 910 ARCH STREET,

PHILADELPHIA.

Photographic Supplies,

Amateur Outfits.

Sole U. S. Agents for

ROSS LENSES.

Complete Price List Mailed Free.

IN THE OPINION OF THE BEST JUDGES, THE

PHOTO-GRAVURE PROCESS

—WORKED BY—

The Photo-Gravure Company

№ 853 Broadway New York

IS THE BEST METHOD OF PHOTO-MECHANICAL PRINTING IN EXISTENCE.

SPECIALLY ADAPTED TO

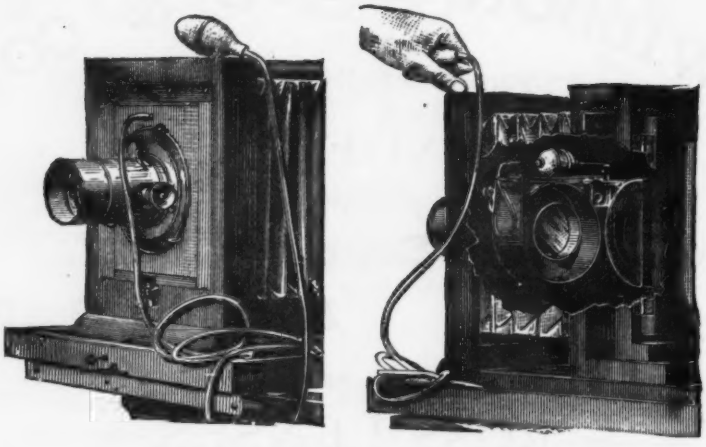
Natural Scenery and Architecture,

WORKS OF ART, PORTRAITS FROM LIFE.

For the Highest Class Work only.

The Results are Best, the Cost is Least.

The Lightning Shutter!



GET THE BEST.

OPENS FROM THE CENTRE! WORKS INSIDE THE CAMERA BOX!

☞ LARGE SALES ENABLE US TO REDUCE THE PRICE. ☜

No. 1—4 inch opening,	$ 6 00
No. 2—4½ inch opening,	7 00
No. 3—5 inch opening,	8 00
No. 4—5½ inch opening,	10 00

MANUFACTURED BY

Thos. H. McCollin & Co.,

No. 635 ARCH STREET, PHILADELPHIA, PA.

CLINTON, WIS., January 15, 1887.

T. H. MCCOLLIN:

The rubber bellows for "Lightning Shutter" to hand, but no bill. As it was bought on December 30, 1881, and has been in steady use five years, I think it is no fault of the shutter that the rubber wore out. Other shutters around here, of the piston variety, I have heard complaints of their leaking when they have been in use but a short time. I have not seen the time I have wished to trade yet.

Respectfully,

Clinton, Rock Co., Wisconsin. A. E. TAYLOR.

PERMANENT

Photographic Enlargements

FOR PHOTOGRAPHERS AND ARTISTS

—BY THE—

Electric Light.

NO DELAY ON ACCOUNT OF WEATHER.

Size.	Unmounted.	Mounted.	On Oiled Canvas, Mtd.
8 x 10*	$1 00	$1 25	$2 20
10 x 12*	1 00	1 25	2 25
11 x 14*	1 25	1 50	2 50
14 x 17*	1 50	2 00	3 00
16 x 20*	1 75	2 25	3 75
18 x 22*	2 00	2 50	4 00
20 x 24	2 25	2 75	4 70
22 x 27	2 50	3 00	5 35
25 x 30	2 75	3 50	6 00
26 x 32	3 00	3 75	7 50
29 x 36	4 00	5 00	8 00
30 x 40	5 50	6 75	8 25
35 x 45	7 00	8 50	
40 x 50	9 00	12 00	
45 x 60	12 00	16 00	
50 x 70	15 00	20 00	
52 x 80	20 00	25 00	

* Negatives, 25 cents extra on these sizes Intermediate sizes charged as next size larger.

TERMS:—Cash with order, otherwise prints will be sent C. O. D., with return charges added. Estimates furnished on every description of art work.

Remember, no delay on account of dull weather.

THOS. H. McCOLLIN & CO.,

635 ARCH STREET, PHILADELPHIA.

THE
American • Journal • of • Photography.

A Monthly Magazine Devoted to Photography.

MARLBORO', January, 1887.

MR. THOS. H. MCCOLLIN:

Dear Sir:—It is with pleasure that I have received the several sample copies, at different times, of your very excellent Journal.

The article in December, 1886, treating on the "Difference in rendering of Light and Shade in Photography and Painting" has enlightened me more than anything else that I can remember as to the theory of placing one color in juxtaposition against another; and one article a year like that would be worth all you ask for the twelve numbers to one who has the real love of art in his soul; also the criticism of the Germans of American photography is very entertaining as well as interesting. I thank you very much for your generosity in sending me the same.

Yours truly,

M. H. ALBEE.

PORT BLAKELEY, January 24, 1887.

THOS. MCCOLLIN, ESQ.:

Dear Sir:—Enclosed find postal order for $1.00, for which please send to my address at Port Blakeley, Washington Territory, one copy of AMERICAN JOURNAL OF PHOTOGRAPHY, for the term of one year, commencing with the January number.

I have received the sample (December number), with which I am well pleased—thanks.

The negative is a marvel of excellence. Your Journal fulfills all the representations you make, and is equal to any of your competitors, although they cost three times as much.

Yours very truly,

S. H. DYER.

ONE DOLLAR A YEAR.

PUBLISHED ON THE 15TH OF EACH MONTH.

THOS. H. McCOLLIN & CO.,

PUBLISHERS,

635 ARCH STREET, PHILADELPHIA.